

Leading by Example Council Meeting

November 1, 2016

Agenda



- **Welcome & Introductions (10:00 – 10:15)**
 - Opening Remarks from Christian Hoepfner, Fraunhofer Center
- **Commonwealth Updates (10:15 – 10:35)**
- **Water Conservation Brainstorm (10:35 – 11:00)**
- **LBE Updates (11:00 – 11:25)**
- **LBE Partner Updates (11:25 – 11:40)**
- **LBE Outreach Materials Brainstorm (11:40 – 11:55)**
- **Events & Next Meeting (11:55 – 12:00)**
- ***Tour of Living Lab (12:00 – 12:45)***

Commonwealth Updates

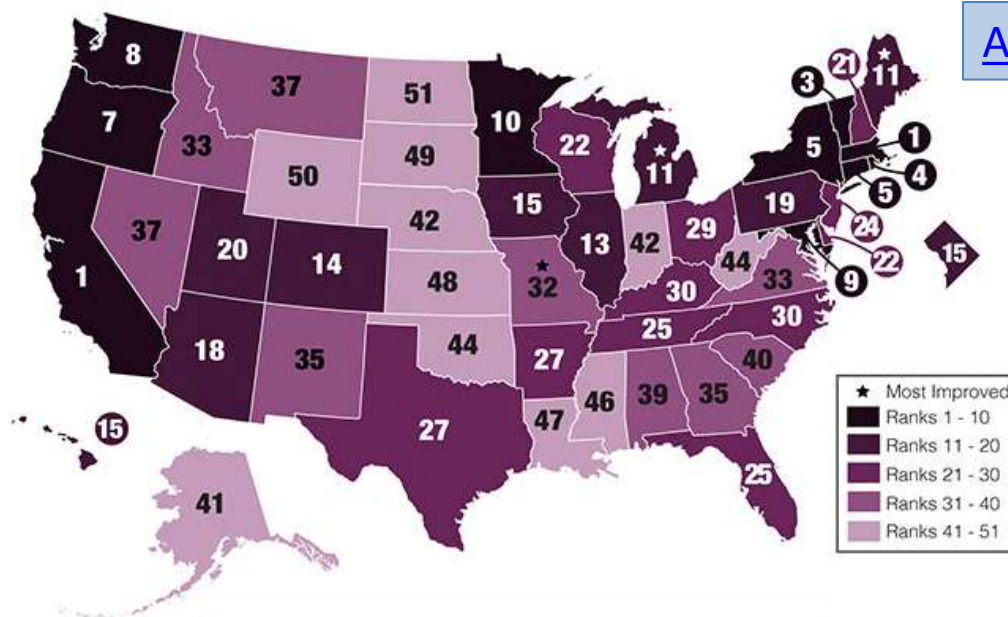
Creating A Clean, Affordable and Resilient Energy Future For the Commonwealth



Massachusetts Department
of Energy Resources

Nationwide Energy Efficiency Ranking - #1!

- MA ranked #1 for sixth-straight year
 - Tied with California



[ACEEE Scorecard, 2016](#)

Massachusetts Named Most Energy Efficient State for Sixth Consecutive Year

Shares Top Spot with California on American Council for an Energy-Efficient Economy Scorecard

BOSTON – September 27, 2016 –The Baker-Polito Administration today announced that the Commonwealth has been named the most energy efficient state in the nation by the American Council for an Energy-Efficient Economy (ACEEE) for the sixth consecutive year. This year, Massachusetts is joined by California at the top of ACEEE's annual scorecard that ranks states on their energy efficiency policies and programs. Earlier today Department of Energy Resources (DOER) Commissioner Judith Judson joined her California counterpart, Commissioner Andrew McAllister of the California Energy Commission, on a national conference call to announce the [2016 ACEEE State Energy Efficiency Scorecard](#).

[Press Release](#)

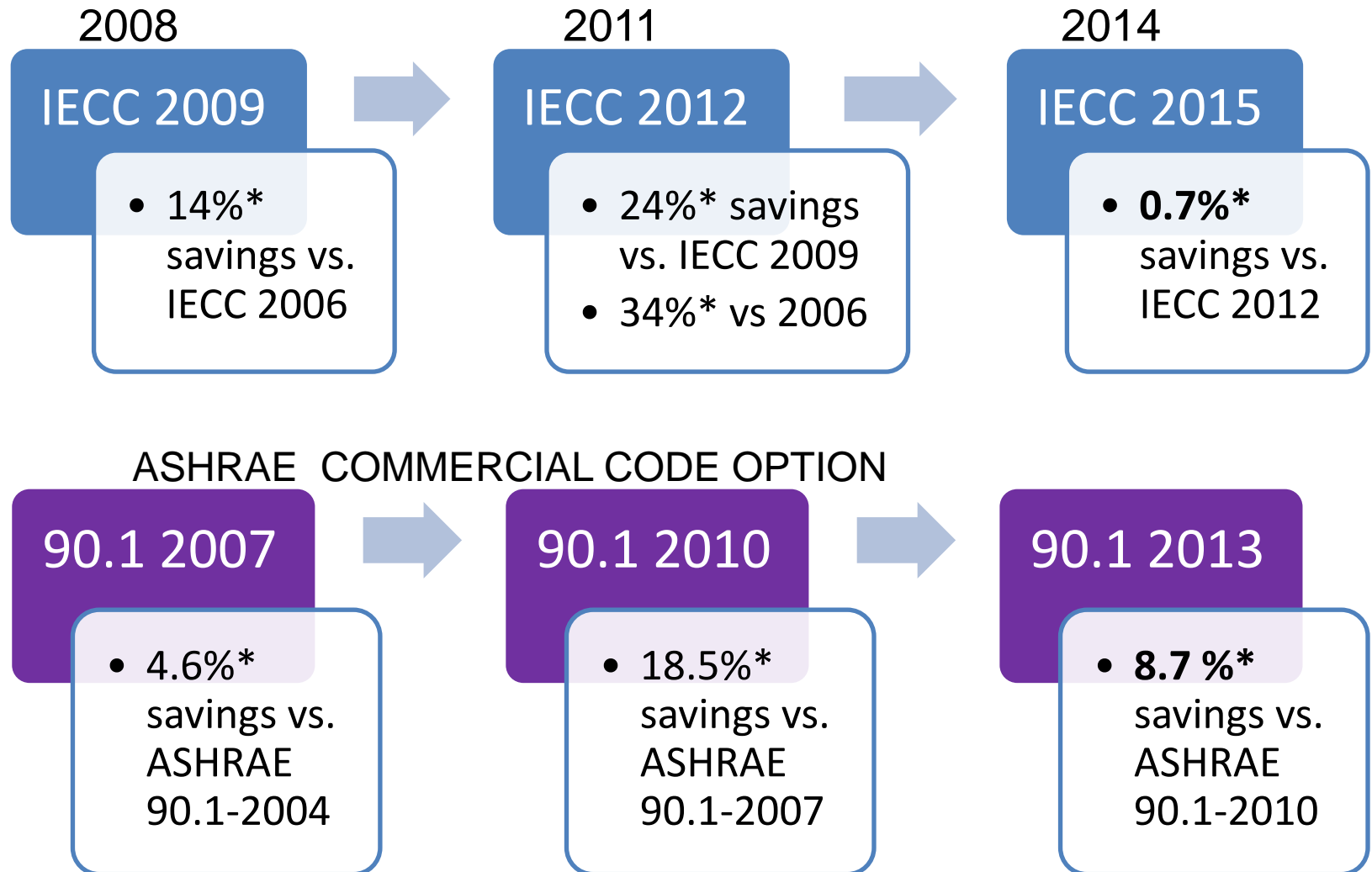


Massachusetts Department
of Energy Resources

Massachusetts Building Code Development

- Energy Code Effective Jan 1, 2017
- Key Changes:
 - Source energy option added to Appendix G
 - Helps CHP
 - Modest Lighting power density reductions
- Updates on DPS [website](#)
- Stretch code applies to new construction
 - >100k SF and Labs
 - >40k SF
- Remaining Energy topics:
 - EV charger ready
 - Solar ready roofs

National Model code development



Energy Codes & Mass. LEED Plus

ASHRAE Standard	90.1-2004	90.1-2007	90.1-2010	90.1-2013
Average % change in Code		-4.6%	-18.5%	-8.7%
Base Code	100	95	78	71
MA LEED+	80	76	62	57
MA LEED+ % change since 2004		-5%	-22%	-29%

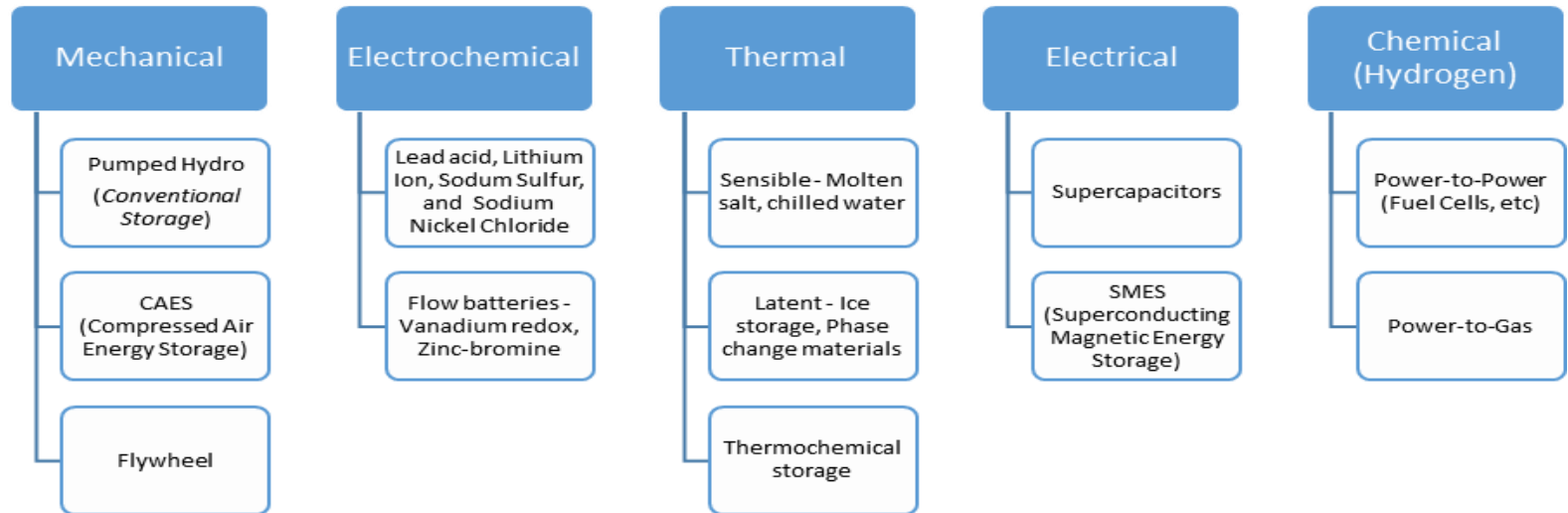
State of Charge: MA Energy Storage Study

In May 2015, Baker-Polito Administration launched the \$10 million **Energy Storage Initiative** to evaluate and demonstrate the benefits of deploying energy storage technologies in MA

- Storage Study Goals:
 - Analyze economic benefits and market opportunities for energy storage in state
 - Examine potential policies and programs that could be implemented to better utilize energy storage in Massachusetts.
 - Provide policy and regulatory recommendations along with cost-benefit analysis
 - Comprehensive stakeholder process (ISO-NE, utilities, DPU, storage industry, DOE labs, and other interested parties)

Types of Advanced Energy Storage

“Advanced Energy Storage” (AES) : emerging storage technologies

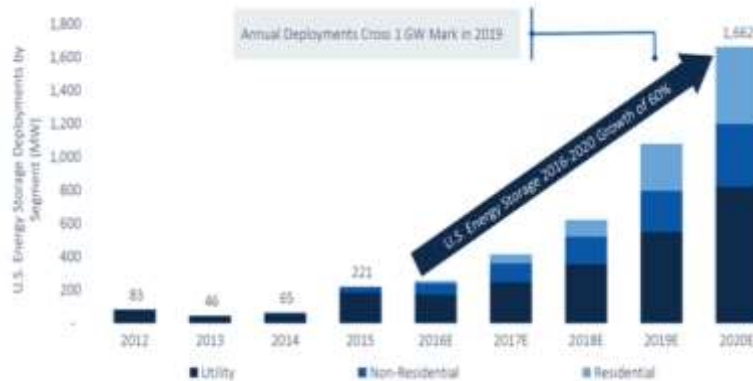


- Proven technology
- Modular & flexible in design
- Useful in many applications
- Quick to respond (dispatchable within seconds)
- Easy to site & quick to market
- Variable durations (15 minutes to over 10 hours)

MA is 23rd in nation with only 1.5 MW of AES deployed

AES Market Trends

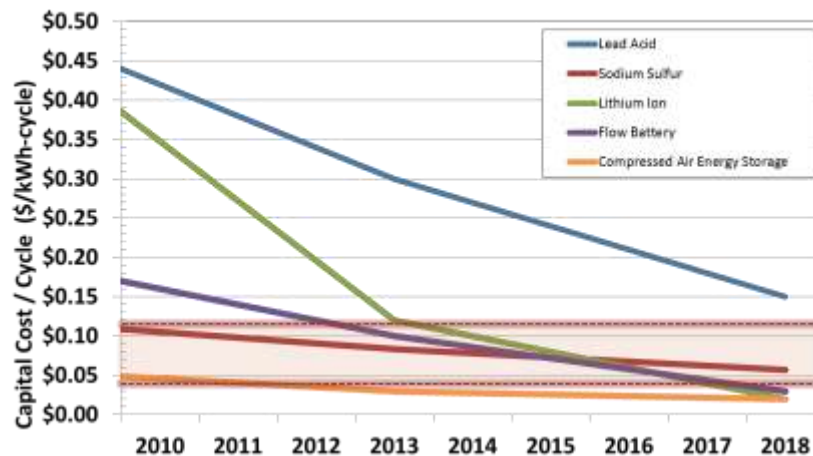
- Deployment of AES is growing rapidly



Annual US Energy Storage Deployment: > 1 GW by 2019, 1.7 GW by 2020

Cumulative US Energy Storage Deployment: 4.5 GW by 2020

- Cost of AES decreasing rapidly



In the ten years between 2008-2018, prices for storage technologies are significantly decreasing with Lithium Ion technology decreasing almost 90%

State of Charge: Findings Summary

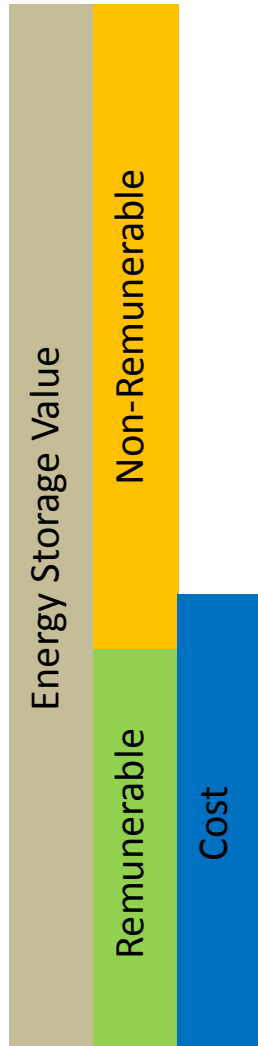
Opportunities:

MA Ratepayer Benefits:

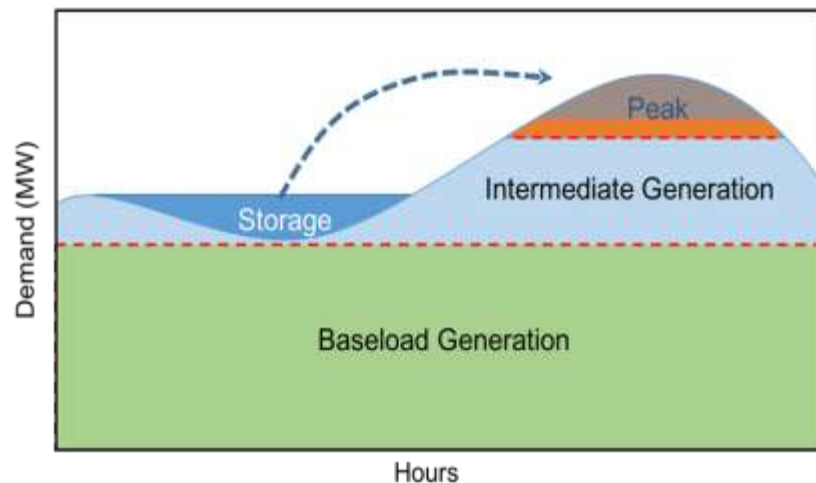
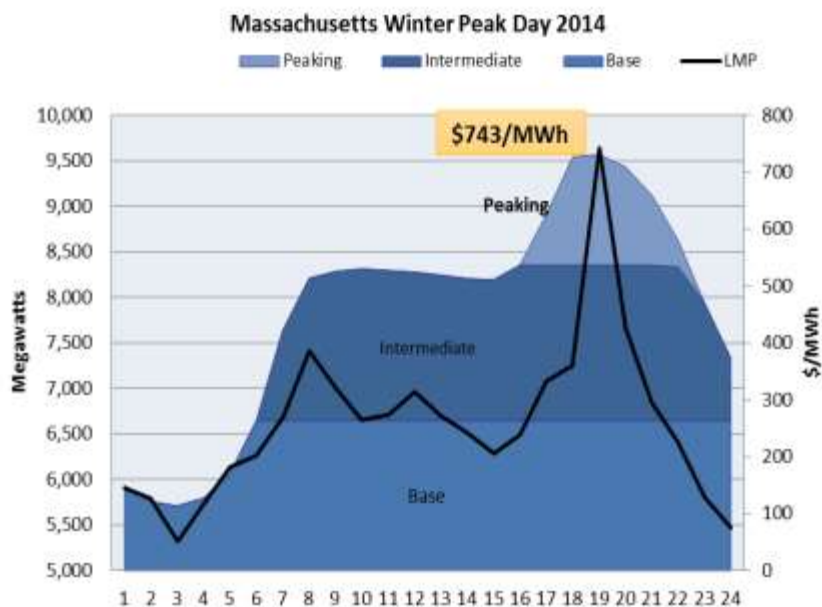
- Reduce price of electricity
- Lower peak demand and defer investment in new infrastructure
- Reduce cost to integrate renewable generation
- Reduce greenhouse gas (GHG) emissions
- Increase grid overall flexibility, reliability and resiliency
- Generate nearly \$600 million in new econ. activity

Barriers:

- Business models for storage in very early stages
- Lack of clear market mechanisms to transfer portion of system benefits to storage project developer



Storage is “Game Changer” for Meeting Peak



Energy storage is the only technology that can use energy generated during low cost off-peak periods to serve load during expensive peak.

Key Study Results

- Recommends suite of policies & programs to promote **600 MW** of AES in MA by 2025
 - Grant & rebate programs (“Mor-Storage”, Green Communities, Feasibility Studies, Resiliency)
 - Add all storage to APS
 - Include storage in next generation solar program
 - Include storage in long term clean energy procurements
 - Change ISO-NE rules to open new markets
- Overall, this will provide over **\$800 million in system benefits** to MA ratepayers

New Solar Incentive Program: Straw Proposal

- Designed as 10-15 year fixed price tariff
- Applies to all distribution companies; same rates across state
- Incentive payments are net of energy value (i.e. total tariff rate minus value of energy)
 - Generators can be net metered, ISO-NE market participants, or qualifying facilities
- Declining block model:
 - 200 MW block sizes (at least 8 blocks)
 - Individual EDC blocks based on load share
 - Tariff values decrease by approx. 5% in each subsequent block
- Full cost recovery for the EDCs for the cost of all tariff payments and administrative costs

Solar Incentive Program: Illustrative Tariff Values

Capacity Based Tariff Rates (kW AC)		
System Capacity	Incentive (\$/kWh)	Term Length
Less than or equal to 25 kW AC (Low Income)	\$0.35	10-year
Less than or equal to 25 kW AC	\$0.30	10-year
>25 - 250 kW AC	\$0.23	15-year
>250 - 1,000 kW AC	\$0.18	15-year
>1,000 - 5,000 kW AC	\$0.15	15-year

Note: These are proposed values and are not necessarily indicative of final tariff rates.

Solar Incentive Program: Illustrative Tariff Adder Values

Location Based Adders	
Type	Adder Value (\$/kWh)
Building Mounted	\$0.02
Brownfield/Landfill	\$0.03
Solar Canopy	\$0.04

Off-taker Based Adders	
Type	Adder Value (\$/kWh)
Community Shared Solar (CSS)	\$0.04
Low Income Property Owner	\$0.04
Low Income CSS ¹	\$0.06

Policy Based Adders	
Type	Adder Value (\$/kWh)
Behind-the-Meter Energy Storage ²	\$0.03
Standalone Solar + Energy Storage	\$0.05
Non-Net Metered	\$0.05

1. Must be at least 25% R-2 customers (extra \$0.01/kWh for each additional 25% of off-takers consisting of R-2 customers)
2. Must be connected to the meter of a G-2 or G-3 customer

Note: These are proposed values and are not necessarily indicative of final tariff rates.

New Energy Websites

- **Commonwealth Energy Tool for Savings (energyCENTS)**
 - Tool to search for incentives, rebates, financing, etc.
 - Applicable to individual consumers, businesses, institutions, etc.
- Launched October 25

mass.gov/energycents

- **Energy Switch Massachusetts**
 - Tool to search competitive electric supply purchasing options
 - Applicable to individual consumers and small businesses
- Launched October 31

energyswitchma.gov



energyCENTS: Commonwealth Energy Tool for Savings

Connecting Energy Incentives with Consumers



[Home](#) | [Glossary](#) | [FAQs](#) | [Contact](#) | [About](#)

The **Commonwealth Energy Tool for Savings (energyCENTS)** provides a single entry point to all of the energy saving opportunities available to Massachusetts residents, businesses and institutions. You can find rebates, loans and financing for electric vehicles, appliances, home energy assessments, solar electricity and far more and then go directly to the sponsor's website.

The information found on this website is maintained by DOER and not the entity offering the incentives or rebates, and as such may not fully reflect actual incentives and requirements. If you find information that is incorrect or inconsistent, please email us at DOER.Energy@State.MA.US with correct information on the energy incentive and your contact information.

Please note that if you are searching for incentives available to Municipal or State Entities, contact DOER.Energy@State.MA.US

What energy source are you looking for?

☒ Electric

☐ Natural Gas

Who are you?

☐ Agriculture Entity

☐ Business/Institution

☐ Clean Energy Industry

☐ Income Eligible Resident

☒ Resident

What are you looking for?

☒ Appliances

☐ Clean Energy Innovation

☐ Electric Vehicles

☐ Energy Audit

☐ Financing

☐ Heating and Cooling

☐ Insulation

☐ Lighting

☐ New Construction

☐ Remodeling

☐ Renewable Power

☐ Solar Electricity

☐ Training and Certifications

Search or refine by keyword or zipcode

Keyword

Zipcode



02114

CLEAR ALL FILTERS

Sample Search

Name	Keyword	Offering Entity	Detail	Amount
\$30 Rebate on ENERGY STAR® Certified Dehumidifier	Dehumidifier; Energy Star; Rebate; MassSave	Eversource	A \$30 rebate is available on ENERGY STAR® certified dehumidifiers.	Up to \$30
\$40 Rebate on ENERGY STAR® Certified Room Air Cleaners	Air Cleaners; Dust; Purifier; Rebate; MassSave	Eversource	Rebates are available for air cleaners.	Up to \$40
\$50 Rebate on ENERGY STAR® Certified Electric Clothes Dyers	Clothes Dryers; Rebate; MassSave	Eversource	Get \$50 back when you purchase an ENERGY STAR certified electric clothes dryer.	Up to \$200
Advanced Power Strips	Power Strips; Multi-outlet; MassSave	Eversource	Save Money When You Buy Advanced Power Strips Online.	Incentive included in price
Refrigerator and Freezer Recycling Program	Refrigerator; Freezer; MassSave	Statewide	JACO's recycling programs offer consumer a rebate for recycling older, working refrigerators and freezers.	Up to \$50
Save money when you buy an efficient shower fixture online	fixture; water; MassSave	Eversource	Use an efficient showerhead or showerhead adapter to save water, energy, and money, without changing your shower habits or shower experience.	Incentive included in price

Sample Results

LET'S GO SHOPPING — FOR ELECTRIC SUPPLY

Electricity consumers in Massachusetts have a choice regarding who provides their electric supply. The Massachusetts Department of Public Utilities has developed this website to assist consumers in shopping for electric supply products.

1. I am shopping for my:

- ☒ Home
☐ Business ⓘ

2. My electric company is: ⓘ

National Grid ▼



START SHOPPING



WHAT ARE YOU SHOPPING FOR?



SUPPLY

CHOICE — Electric supply is associated with the production and purchase of the electricity we use. Competitive suppliers offer consumers a variety of electric supply products that vary according to price, renewable energy, and energy technology services.



DELIVERY

NO CHOICE — Electric delivery is associated with the wires, poles, meters and other equipment that transports electricity to our homes and businesses. The electric companies in Massachusetts deliver electricity to our homes and businesses regardless of our choice of electric supplier.



ELECTRIC SERVICE

[Learn More](#)

[GO SHOPPING](#)
[YOUR ELECTRIC SERVICE](#)

[Frequently Asked Questions Overview](#)
[Understanding Your Bill](#)
[Renewable Energy Products](#)

[ABOUT THE WEBSITE](#)

[Website Quick-Start Guide](#)
[Glossary of Terms](#)

[CONTACT US](#)

LET'S GO SHOPPING

for residential electric supply products in the National Grid service territory. You can filter, sort, and compare the products to help you find which may be right for you.

Average Monthly Usage (kWh) 

Usage / month

[Update](#)

Filtering Options

[Show](#)

Sort By




























View

[Print](#)

[Compare](#)

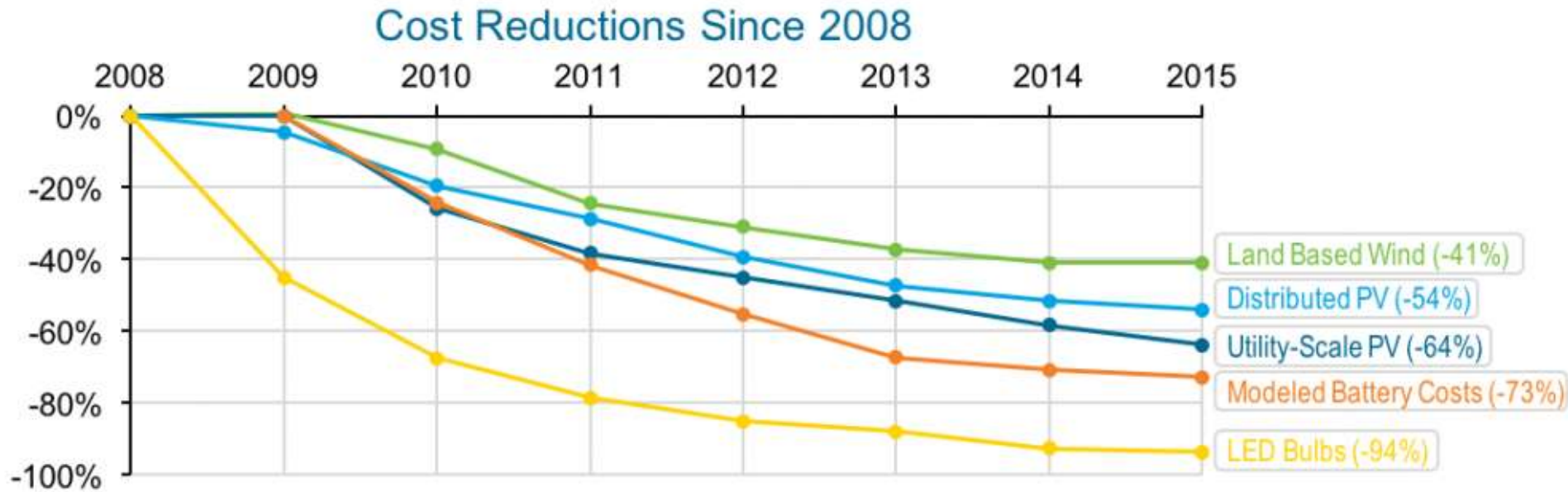
Electric Supply Products

Total Products: 25

SUPPLIER NAME	PRICE 	CONTRACT TERM 	RENEWABLE ENERGY 	ADDITIONAL PRODUCTS & SERVICES	ESTIMATED MONTHLY COST 
Basic Service 	8.084 ¢/kWh 9.787 ¢/kWh	May '16 through Oct '16 Nov '16 through Apr '17			\$58.72 through Apr '17
 Sign Up Compare 	9.200 ¢/kWh	6 months Automatic renewal 			\$55.20 through Apr '17
 Sign Up Compare 	11.590 ¢/kWh \$4.98 enrollment fee	36 months Cancellation fee  Automatic renewal 			\$69.68 through Oct '19
 Sign Up Compare 	12.690 ¢/kWh	6 months Cancellation fee  Automatic renewal 			\$76.14 through Apr '17
 Sign Up Compare 	14.590 ¢/kWh	24 months Cancellation fee  Automatic renewal 			\$87.54 through Oct '18
 Sign Up Compare 	9.990 ¢/kWh	6 months Automatic renewal 			\$59.94 through Apr '17
 Sign Up Compare 	11.215 ¢/kWh	12 months Cancellation fee  Automatic renewal 			\$67.29 through Oc

Sample Results

Energy Technology Cost Reductions



Source: [US DOE, 2016](#)

Executive Order 569

- EO 569: Establishing an Integrated Climate Change Strategy for the Commonwealth
- Directs EEA and Public Safety and Security to lead development of statewide climate adaptation plan
- Each Exec. Office to designate a Climate Change Coordinator
- DEP granted authority to issue regulations including:
 - leaks from natural gas distribution system;
 - new, expanded, or renewed emissions permits or approvals;
 - transportation sector, including state fleet;
 - gas insulated switchgear

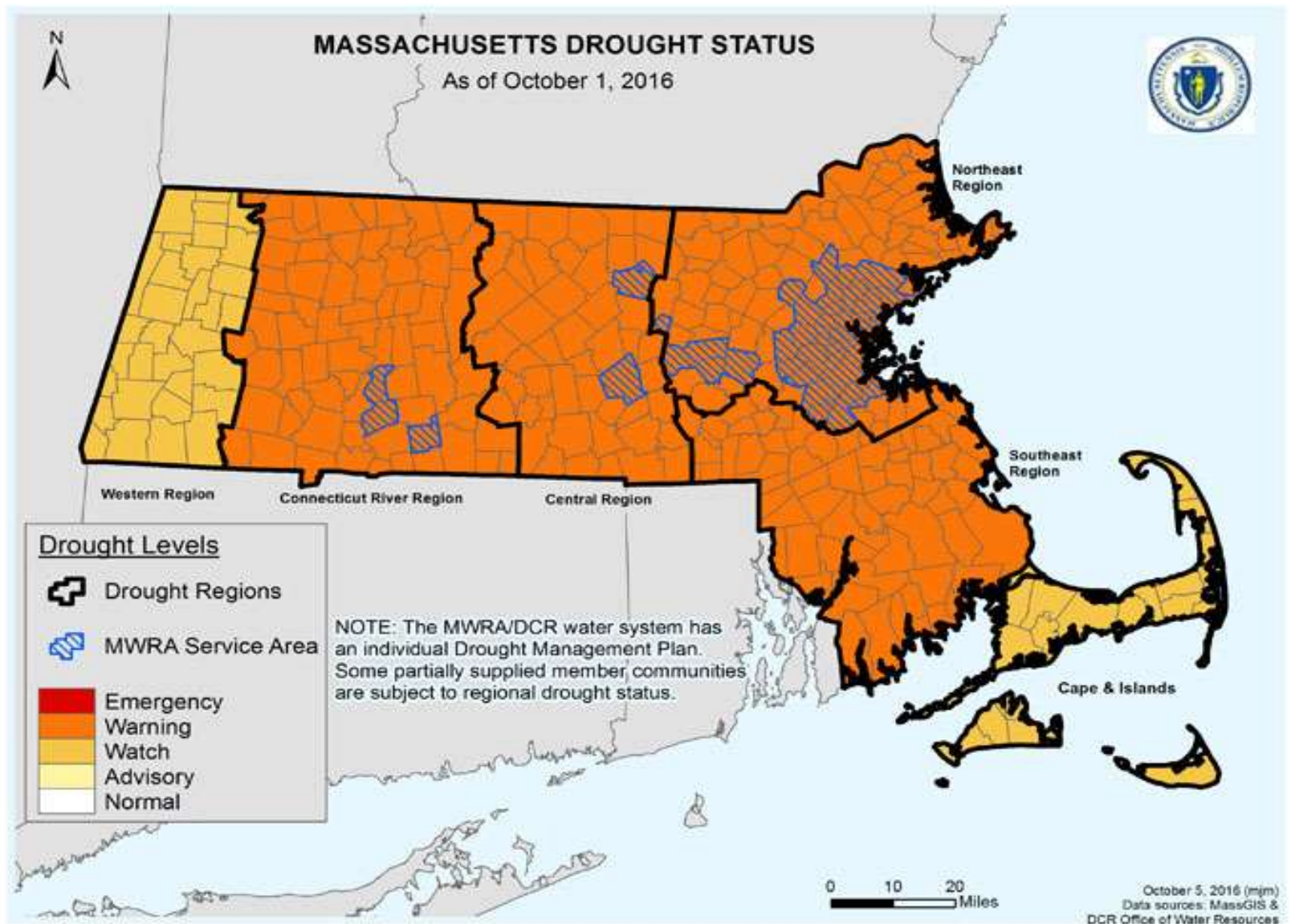


Gov. Baker Signs EO Sept. 16

[Photo: Gov. Baker Twitter](#)

Water Conservation Brainstorm

Drought Update

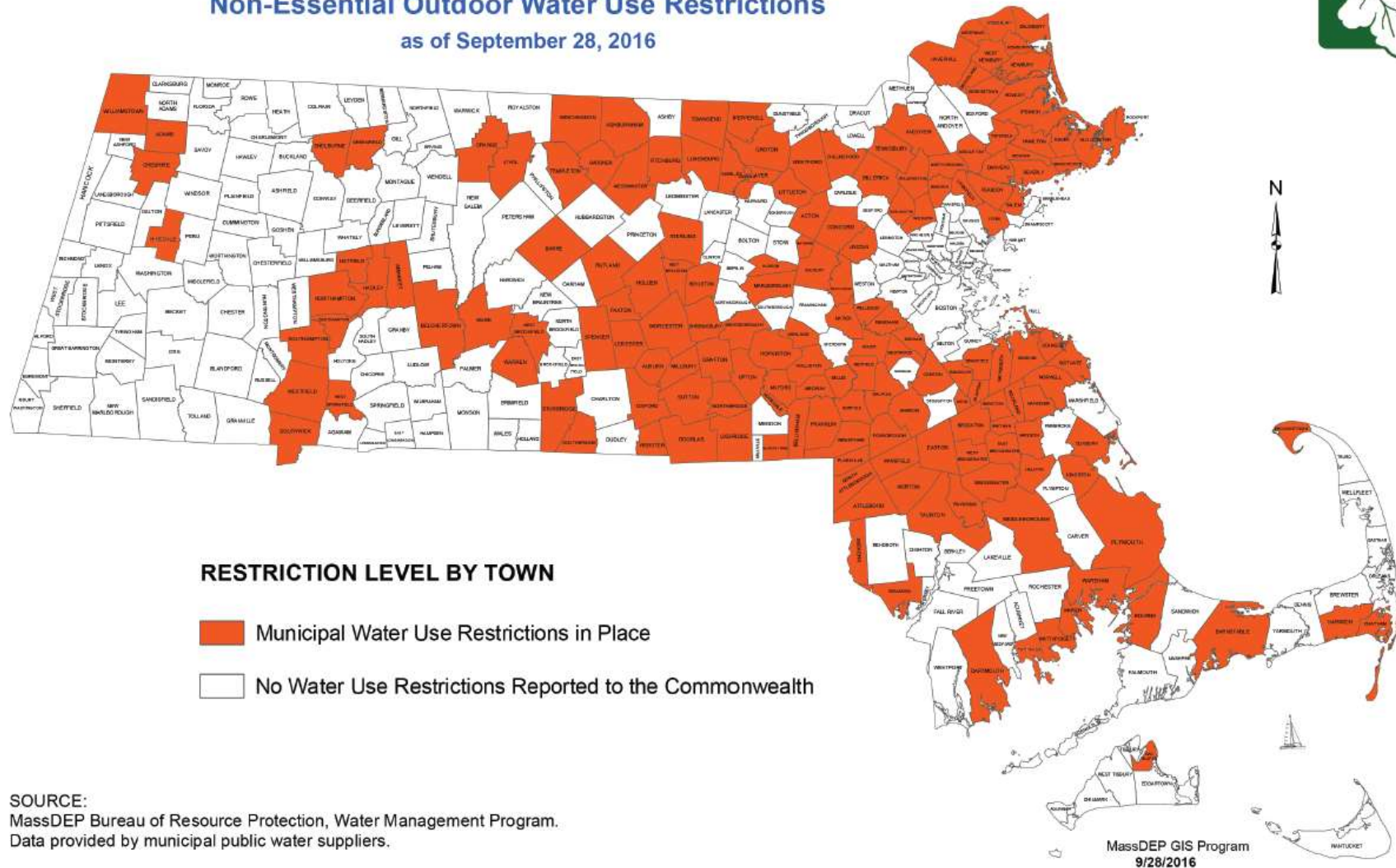


Drought Update

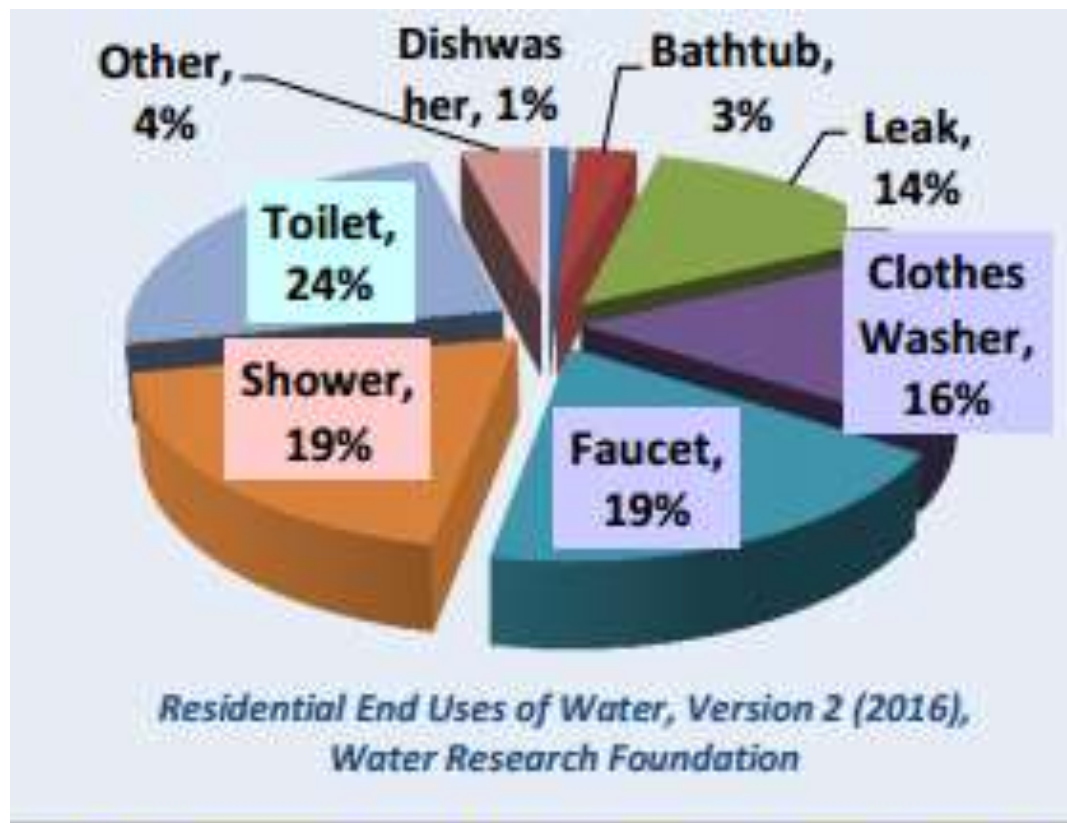
CURRENT MUNICIPAL WATER USE RESTRICTIONS

Non-Essential Outdoor Water Use Restrictions

as of September 28, 2016



National Residential Indoor Water Use Stats



Daily percent of indoor water use, per person

State Outreach



Mass.gov

DON'T LEAVE THE TAP RUNNING

Turn off the faucet when brushing your teeth to save 200 gallons of water a month

mass.gov/eea/drought #MAAdrought



Mass.gov

FIX LEAKING FAUCETS, PIPES, AND TOILETS

The average U.S. family can save 10,000 gallons of water a year by fixing leaks

mass.gov/eea/drought #MAAdrought



Mass.gov

TAKE SHORTER SHOWERS AND USE WATER-SAVING SHOWERHEADS

Shorten your shower by 1 minute to save 550 gallons a year

mass.gov/eea/drought #MAAdrought



Mass.gov

ONLY WASH FULL LOADS OF LAUNDRY

Wash full loads of laundry to save 15 to 45 gallons of water a load

mass.gov/eea/drought #MAAdrought



Mass.gov

FOLLOW LOCAL WATER RESTRICTIONS

Find out if water restrictions are in place where you live or work

mass.gov/eea/drought #MAAdrought



Mass.gov

ELIMINATE OUTDOOR WATER USE

[Mass.gov/EEA/drought](https://mass.gov/EEA/drought) #MAAdrought

Water Conservation Brainstorm

Outdoor

- *landscaping practices*
- *native plantings*
- *moisture sensors*
- *timing of watering*
- *rainwater harvesting*
- *Other?*

Indoor Examples

- *low-flow fixtures*
- *shower timers*
- *education*
- *leak reporting/detection*
- *Other?*

HOW CAN LBE HELP WITH WATER CONSERVATION?

- *Share existing policies/ guidance documents / best practices?*
- *Link to new technologies?*
- *Information on statewide contracts?*
- *Peer to peer learning?*
- *On-site trainings?*

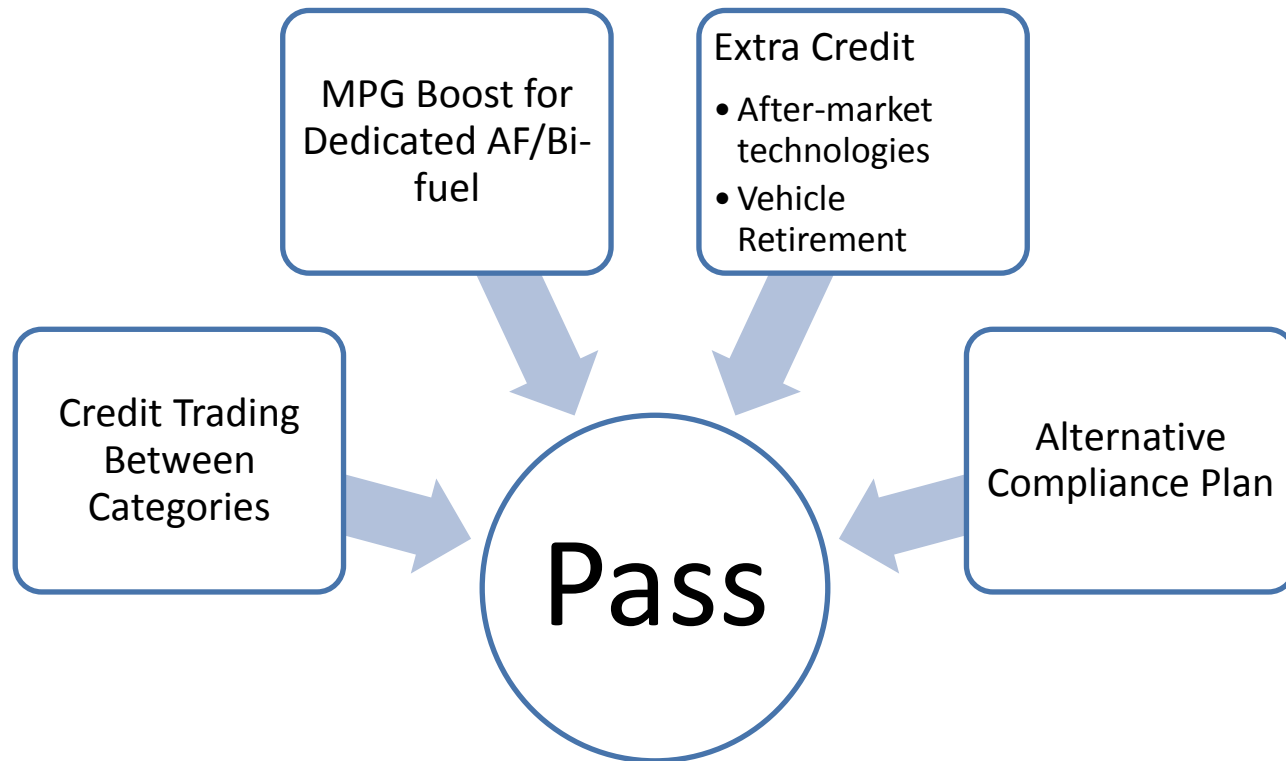
LBE Updates

MA Fuel Efficiency Standard for State Fleet

- Applies to Executive Branch Passenger Vehicle Acquisitions
 - All cars, passenger vans, cargo vans, pickup trucks, and SUVs with a GVWR < 10,000 lbs
- Two Key Requirements for New Acquisitions
 1. Average EPA-rated combined MPG of
 - **32 MPG** for passenger cars
 - **22 MPG** for light duty trucks, vans, SUVs
 2. Minimum of 5% of Acquisition must be AFVs, HEVs, PHEVs, BEVs



Flexibility in Compliance



Update on Statewide Vehicle Contracts

- VEH98
 - Over 500 light-duty vehicles (cars, vans, SUVs, pickups)
 - Close to 20% of vehicles meet FES (including all vehicle types and OEMs)
 - Toyota to be added for MY17
- VEH102 – coming soon

AWARDED VENDORS	<u>Category 1</u> ELECTRIC VEHICLE SUPPLY EQUIPMENT	<u>Category 2</u> ANTI-IDLING TECHNOLOGY	<u>Category 3</u> HYBRID RETROFIT TECHNOLOGY
ClipperCreek, Inc.	✓		
EVSE LLC	✓		
Graybar Electric Company, Inc.	✓		
LiquidSky Technologies	✓		
Telefonix, Inc.	✓		
Verdek	✓		✓
Voltrek, LLC	✓		
eNow, Inc.		✓	
Magmotor Technologies, Inc.			✓
National Van Builders, Inc.			✓
XL Hybrids			✓

Clean Energy Resiliency Grants

\$14 million in funding announced Sept. 22

Example technologies: solar plus storage; CHP Islanding

1. Hospitals

- ☐ Project type: implementation
- ☐ Eligible Audience: Public and Private hospitals
- ☐ Schedule: grant opportunity this fall
- ☐ Grant Type: funds to individual hospitals
- ☐ Final Product: Project completion

2. State Facilities

- ☐ Project type: feasibility study
- ☐ Eligible Audience: state agencies housing residential vulnerable populations that are difficult to evacuate
- ☐ Schedule: select sites this fall, study in early 2017
- ☐ Grant Type: DOER to hire consultant for study
- ☐ Final Product: Report with resiliency recommendations

[DOER Press Release](#)

LBE Grants - Current

- **UMass Lowell:** 200kW solar canopy (LBE Grant: \$150,660)
 - construction complete
- **Mass. College of Liberal Arts** Campus CHP (LBE Grant: \$604,000)
 - Complete this month



- **DFG Plum Island** Air Source Heat Pumps (LBE Grant: \$44,058)
 - Complete this fall
- **MWRA** Pipeline and Hydropower Turbine (LBE Grant: \$288,500)
 - In construction
- **DCR** Scusset Beach and Halibut Point: Air Source Heat Pump installation: (LBE Grant: \$86,933)
 - Grant awarded

LBE Grants – Upcoming

By end of calendar year:

- Resiliency feasibility study
- Vehicles
 - Alt fuel conversions
 - Hybrids
 - Idle reduction
- General feasibility studies
 - Storage
 - Renewable thermal
 - Solar canopies

Alternative Vehicle Technologies Grant Program

- Only agencies subject to FES are eligible
- \$300K available in FY17
- Grants for:

After-market conversions (hybrid or alternative fuel) for light, medium or heavy duty vehicles	100% of cost, up to \$20K per vehicle
Idle reduction technologies for light, medium or heavy duty fleets	100% of cost, up to \$5K per vehicle
Hybrid Electric Vehicles (HEVs) from VEH98	\$2,500 per vehicle

Construction Law Change

- Increases no-bid \$10,000 construction limit to \$50,000
- Will help with maintenance and repair efforts and small scale installation of equipment (e.g. EV charging stations)
- Goes into effect November 7

Threshold	Required Procedure
Less than \$10,000	Use sound business practices
\$10,000 - \$50,000	Request 3 written quotes
More than \$50,000	Use an Invitation for Bids or Request for Proposals

[IG Online Guide](#)

Building Energy Reporting and Disclosure Ordinance (BERDO)

- Boston's BERDO requires large- and medium-sized buildings to publish energy and water consumption data
- Applies to buildings over 35,000 SF
- Includes annual energy and water consumption (where available)
- LBE supporting state to voluntarily submit data
 - Submitted data for 4 DCAMM buildings
 - Contacting other agencies to see if they want to have DOER submit on their behalf

FY16 LBE Tracking Form

- Tracking Form to be posted shortly
- Minor changes to last year's form
- Includes updates to square footage and on-site generation

Mattress Recycling

- FAC90 – statewide contract for mattress recycling
- Reviewing results of LBE Mattress Survey conducted this summer
 - Collaborating with MassDEP
- Will follow-up w/ facilities
 - Potential savings opportunities or minimal cost identified for mattress recycling
 - Approx. 370+ mattresses disposed annually across 3 state agencies/campuses applicable, identifying others
 - Example: some state facilities charged special fee for mattress disposal

LBE Partner Updates

Find EPP Furniture on OFF38

- OFF38: Office, School and Library Furniture, Accessories & Installation Statewide Contract
- Searchable list of 850 lines of furniture
 - from 9 vendors
 - representing 27 manufacturers
- 350 lines meet EPP criteria, including those for indoor air quality:
 - Reduced formaldehyde and volatile organic compounds (VOCs) emissions
 - Free of added antimicrobials
 - Flame retardant free
 - Polyvinyl chloride (PVC) free
 - Free of per- and poly-fluorinated chemicals used as stain/water/oil resistant treatments



Find EPP Furniture on OFF38

www.mass.gov/epp, select the EPP Furniture icon on the homepage!

- Summary of project
- Guidance For Environmentally Preferable Furniture
 - *Review of Chemicals of Concern and Certifications & Standards in Furniture*
- EPP Furniture Table



EPP Furniture on OFF38: Office, School and Library Furniture, Accessories & Installation Statewide Contract																		
<p>The information in the table was submitted by the vendors/manufacturers and it has not been verified by the Commonwealth of Massachusetts. OSD will update the information periodically, but it is important that buyers verify the information with vendors prior to purchase. This table is meant solely as a guide to help buyers identify environmentally preferable options. Vendors that would like to change any information should send a request to Julia Wolfe, Director of Environmental Purchasing at julia.wolfe@state.ma.us.</p> <p>For a summary of this table and additional guidance, visit the OSD EPP Furniture webpage at www.mass.gov/epp.</p> <p>This table was compiled as of 7/1/2018</p> <p>Use the filter buttons in the lower right corner of the header row table to sort options.</p>					<p>Key (please refer to the "Answer Key Tab" below for additional information)</p> <p>AB Some No/None Unknown Does Not Apply</p>													
Meets EPP if each column is checked "All" or "Some" in attributes listed below																		
OFF38 Vendor	Manufacturer	Product Line	Product Type	EPP or EPP+1	Reduced VOC Emissions (NOTE: Meets CA Section 01350)	Meets CA CCR, Title II (for household use)	Flame Retardant-Free (NOTE: includes TB 133)	Free of Added Anti-Microbials (NOTE: waterborne disinfectants added for the sole purpose of preventing the product from growing - example: "w")	PVC-Free (NOTE: products made of less than 1% PVC by weight are exempt)	Free of gas and poly-fluorinated chemicals used in drink or water repellent treatments	GreenGuard Gold Certified	SCS Indoor Advantage Gold Certified	Cradle to Cradle Certified	BIFMA Level (NOTE: level 1, 2 or 3)	Health Product Declaration Available	Compliant with California's Proposition 65 (NOTE: Some manufacturers and manufacturers do not have a Proposition 65 label on their products)	Forest Stewardship Council Certified	Labelled for Flame Retardant Content (per Section 19094 to the Electronics and Professional Code)
Crestline Office Pavilion	Herman Miller	Aurora	Seating	EPP Plus	All	All	All	All	All	Some	Unknown	Unknown	All	Level 3	No/None	All	No/None	All
Postbody Office	Herman Miller	Blackwell, Flex	Accessories	EPP Plus	All	All	All	All	All	All	No/None	All	No/None	Level 1	No/None	No/None	All	Does not apply
Postbody Office	Kinnaird Office Inc.	Flex	Seating	EPP Plus	All	All	All	All	All	All	All	All	Level 3	No/None	All	All	All	All
WB Moore	Alibaba	Gabriel Diego Seating	Seating	EPP Plus	All	All	Some	Some	All	Some	No/None	All	No/None	Level 2	No/None	Some	Some	All
WB Moore	Alibaba	Gabriel Med-Bar Seating	Seating	EPP Plus	All	All	Some	Some	All	Some	No/None	All	No/None	Level 2	No/None	Some	Some	All
WB Moore	Alibaba	Gabriel Rio Seating	Seating	EPP Plus	All	All	Some	Some	All	Some	No/None	All	No/None	Level 2	No/None	Some	Some	All
WB Moore	Alibaba	Gabriel Seating Seating	Seating	EPP Plus	All	All	Some	Some	All	Some	No/None	All	No/None	Level 2	No/None	Some	Some	All

Find EPP Furniture on OFF38



Four Important Questions to Ask Furniture Vendor Prior to Purchase:

1. **Chemicals/Products of Concern:** Help you to select options without above listed chemicals.
2. **Fabric Choice:** Help identify fabrics free of fluorinated stain treatments, antimicrobials, PVC, and/or flame retardants. Proper fabric choice is essential to ensure a healthier product.
3. **Recycled content:** If recycled content is in product, find out the source. Recycled content is generally positive, but the use of recycled content plastics has the potential to introduce one or more of the chemicals of concern into the product.
4. **Verification:** Request verification of 3rd party certifications or compliance to any claimed attributes.

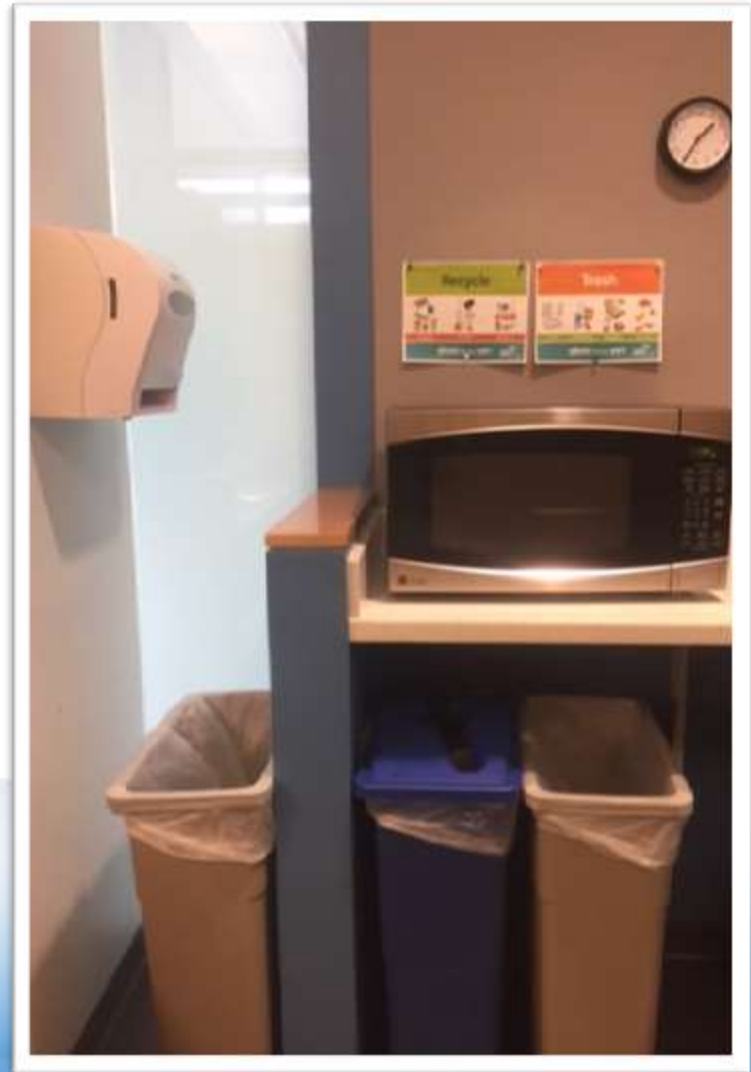
Julia Wolfe

Director, Environmental Purchasing

julia.wolfe@state.ma.us | 617-502-8836

Centralized Trash Program

UMass Medical School



Leading by Example Council
November 1, 2016



Centralized Trash Program Overview

- Removes desk side trash bins from offices and cubicles and replaces them with desk side single stream recycling bins (or leaves existing recycling bins in place).
- Centralized trash bins are located in the kitchenettes / convenient areas on each floor
- The program, by design, makes recycling convenient and encourages people to think about what they generate that is truly trash.

Program Goals

1. Increase recycling rates
2. Implement a desk side recycling program across campus *without increasing labor time*
3. Minimize use of plastic liners

Scope

Office and cubical in Medical School buildings NOT located inside the laboratories

To date centralized trash has been implemented in the ASC and LRB

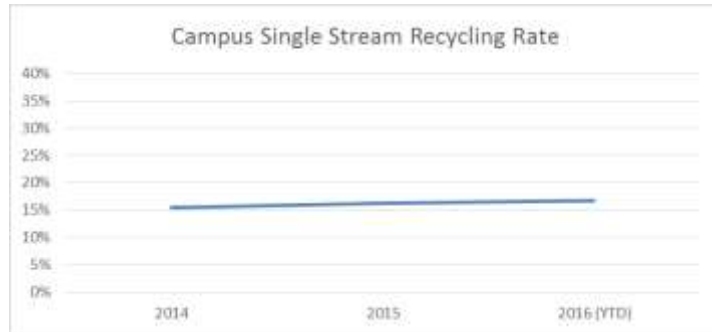


Why target single stream recycling?

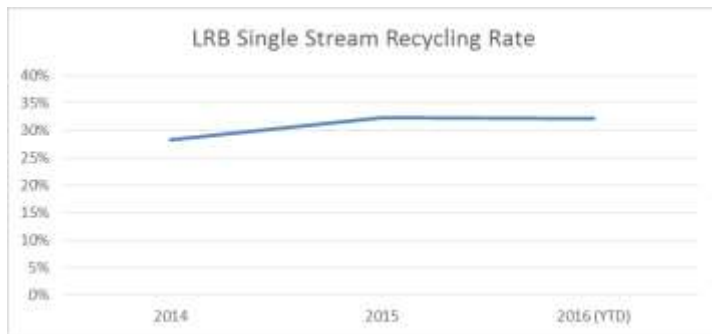
- Sustainability Goal: Increase waste diversion rate from 30% to 40%
- Load audit by waste hauler show that there is still opportunity to capture single stream recycling
 - Current single stream recycling rate = 15.5%
 - Target single stream recycling rate = 25.5%
- Single stream recycling tonnage has been stagnant at about 100 tons/year
- From the perspective of engagement- this is what we can control



Success of Centralized Trash Program



Campus: Since 2014 campus recycling rates have increase 1.3%



LRB: centralized trash started in the summer of 2014 and was fully implemented by summer 2015. Between 2014 and 2016 single stream recycling increased 3.9%



ASC: Jan 1, 2016 centralized trash was rolled out in the building. The 2015 to 2016 increase in recycling rate is 2.3%, compared to a 1.3% increase between 2013 and 2014



Other Benefits

- Reduced labor since recycling is emptied every other day instead of once a day which was the case for trash.
 - This saves 45 hours a week or 4,500 hours a year leaving more time for deep cleaning
- Eliminates use of plastic lines used in desk side trash bins.
 - Implementation in 500 office/cubicles saves approximately 125,000 liners annual



Lessons Learned

- Get buy-in from senior leaders
 - Speak their language and align with their goals
- COMMUNICATION with staff impacted by program
 - Meet with academic admins, and grab 10 minutes at department meeting to engage staff
- PDSA the process with housekeeping



New Visitor Center at Walden Pond State Reservation



**Leading By Example Council
November 1, 2016**

New Visitor Center – Why?

The former park headquarters building was not intended to be a visitor center and did not communicate the property's significance. The current space only featured a small gallery, administrative / office space, and a bookstore.



Project Overview

Solar Parking Canopy / Utility Improvements

- On-site power to provide for the needs of the new visitor center
- Shade and cover for adjacent parking spaces
- Title V compliant wastewater system

New Visitor Center Building

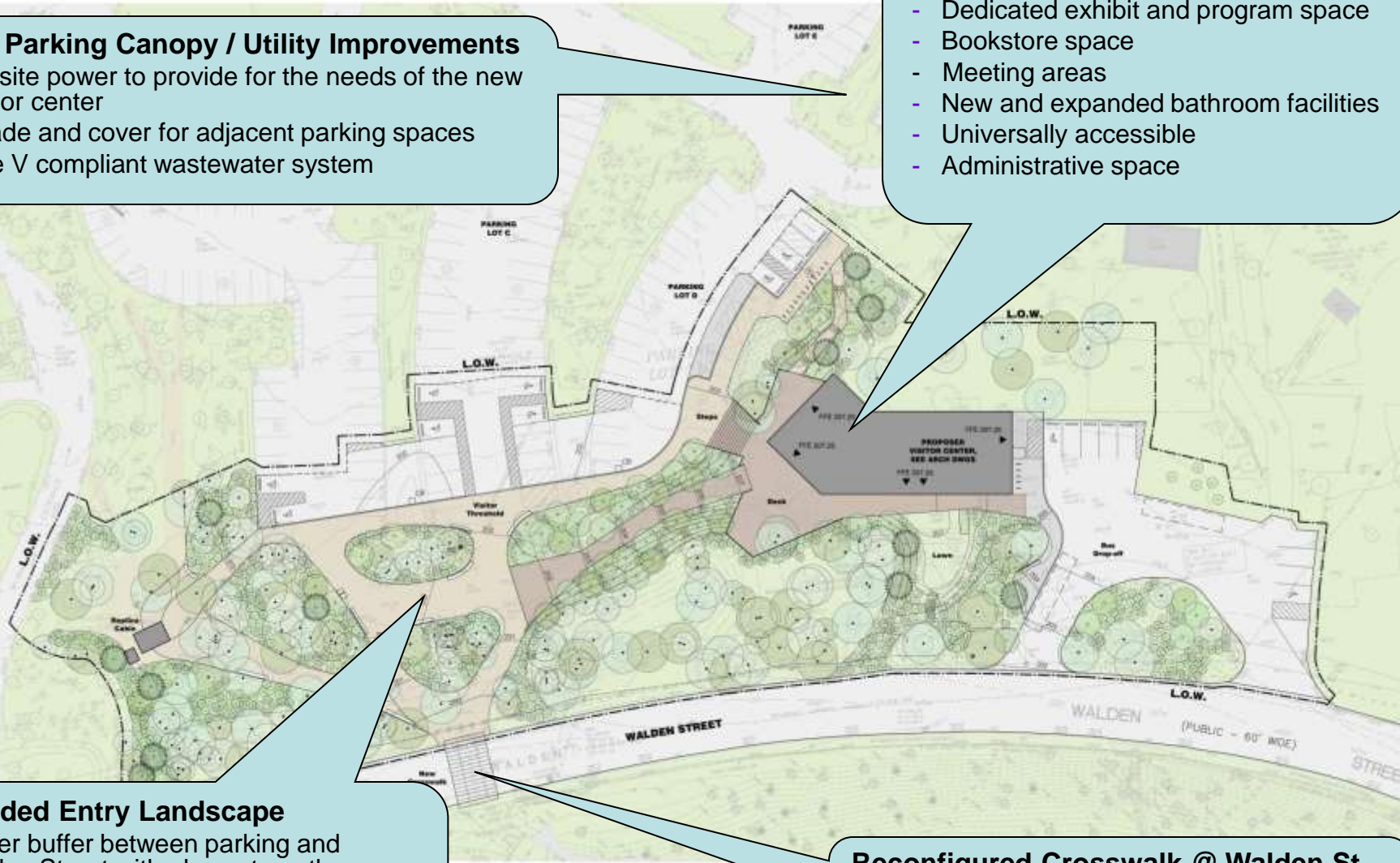
- Dedicated exhibit and program space
- Bookstore space
- Meeting areas
- New and expanded bathroom facilities
- Universally accessible
- Administrative space

Expanded Entry Landscape

- Larger buffer between parking and Walden Street with places to gather or wait when crossing to trails and beach
- Activation of area around replica cabin and new visitor center

Reconfigured Crosswalk @ Walden St.

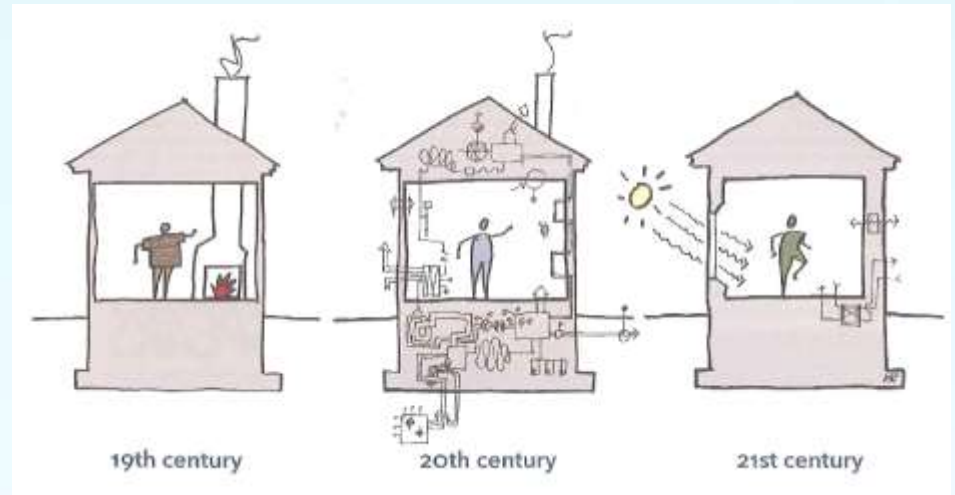
- Clearly marked crosswalk to aid in pedestrian safety getting to and from trails and beach area



Sustainable Elements

The new Visitor Center treads lightly on the earth – designed as a Zero Net Energy Building that will be LEED Gold certified. A number of sustainable strategies were incorporated into its design, including:

- A super-insulated building envelope and highly energy efficient triple-pane windows
- Passive solar building orientation and openings
- Natural ventilation/cooling
- Daylighting for most of the spaces
- All electric air-to-air heatpump HVAC system, eliminating the need for on-site fossil fuels
- Solar hot water system for building hot water needs
- Sustainable materials and practices
- Native plants in the landscape
- Photovoltaic parking canopy structure to generate on-site electricity



Funding Summary

Project Cost: \$7.2 million

- Managed by DCAMM and DCR
- State grants from Department of Energy Resources and Department of Environmental Protection
 - Zero Net Energy Building Grant (\$130,850)
 - Renewable Thermal Grant (\$125,000)
 - LBE Clean Energy Grant (\$52,000)
 - Electric Vehicle Charging Station Grant (\$13,600)



LBE Outreach Materials Brainstorm

LBE Outreach Materials Review

Top 10 Tips/Ideas

Ideas

Top 10...

- Water Conservation Tips
- Event Waste Minimization & Recycling Tips
- Alternative Transportation Tips
- Environmentally Preferable Purchasing Tips
- Efficient Building Operations Tips
- Personal Opportunities in MA (*e.g. MassSave, MOR-EV*)

Commonwealth of Massachusetts
LEADING BY EXAMPLE PROGRAM


TOP 10 LOW AND NO COST ENERGY REDUCTION TIPS

Here are a few simple things that *you and your facility* can do to
lead by example to reduce energy use and costs:

1. Replace incandescent bulbs with LEDs, which use up to 80% less energy and last up significantly longer than incandescent bulbs
2. Install lighting motion sensors in restrooms, kitchens, and conference rooms
3. Require **ENERGY STAR** office equipment procurement, including computers, monitors, copiers, and printers. Equipment will shut down after periods of inactivity, providing significant energy savings
4. Enable (and regularly check) computer power management settings
5. Implement and regularly verify your building shutdown schedule to reduce off-peak energy use during evenings, holidays, and weekends
6. Use and/or distribute advanced power strips with timers, motion sensors, and/or remote control capabilities to reduce plug-loads and energy costs
7. Initiate a regular maintenance program that includes equipment inspections, filter replacements, and correction of system overrides for maximum efficiency
8. Conduct a nighttime energy audit to find out if equipment is on after-hours
9. Remind staff to turn off equipment/appliances during periods of non-use
10. Sign up for a demand response program to potentially receive financial payments for reducing electrical consumption during peak periods

Resources:

- For LED bulbs or other efficiency products, see [statewide contract FAC76](#)
- Find Environmentally Preferable Products (EPP), by using the [EPP Program Guide](#)
- For more efficiency and cost-saving tips, check out this [ENERGY STAR resource](#)
- Find out more about Demand Response opportunities from [DCAMM](#)

 EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS – DEPARTMENT OF ENERGY RESOURCES
www.mass.gov/eea/leadingbyexample

Outreach Questions

- *Are Top 10 lists help?*
 - *Other formats?*
- *What information is helpful?*
- *Key audience(s)?*
- *What topics are helpful?*
- *Other suggestions?*

Events & Next Meeting

- Webinar: Energy Storage – Is It Right for Your Building?
 - November 8: [Register](#)
- Webinar: Building Envelope Tech Team
 - November 9: [Register](#)
- Next Meeting: Joint Meeting with LBE and DCAMM/AEP:
 - January 10, 2017 from 10am-12pm
 - Location: Mount Wachusett CC



Living Lab Tour

12:00 – 12:45